

IX.4.3C-FFG PREPROCESSOR PARAMETRIC DATA BASE PARAMETER ARRAY FFG:
FLASH FLOOD GUIDANCE OPERATION PARAMETERS

Purpose

Parameter array FFG contains parameters for the Flash Flood Guidance Operation.

Array Contents

<u>Starting Position</u>	<u>Dimension</u>	<u>Type</u>	<u>Input/Generated</u>	<u>Description</u>
1	1	I*4	G	Parameter array version number
2	1	A8	I	Flash flood guidance area identifier
4	1	A20	I	Description
9	1	A8	I	Basin boundary identifier <u>1</u> /
11	1	R*4	G	HRAP row (Y coordinate) of basin centroid; from basin boundary definition
12	1	R*4	G	HRAP column (X coordinate) of basin centroid; from basin boundary definition
13	1	I*4	I	Duration flag: 0 =1, 3 and 6 hours 1 =1, 3, 6 and 12 hours 2 =1, 3, 6, 12 and 24 hours
14	1	I*4	I	Location of snow model information in this array (LS): 0 = not used
15	2	R*4	G	Unused <u>2</u> /
17	1	I*4	G	Julian hour of values as specified by HCL Technique LSTCMPDY; hours since 01/01/1900/00Z
18	8	R*4	G	Four pairs of alternating rainfall and runoff values that define the curve for 1 hour duration
26	8	R*4	G	Four pairs of alternating rainfall and runoff values that

<u>Starting Position</u>	<u>Dimension</u>	<u>Type</u>	<u>Input/Generated</u>	<u>Description</u>
				define the curve for 3 hour duration
34	8	R*4	G	Four pairs of alternating rainfall and runoff values that define the curve for 6 hour duration

The following position is used if the duration flag in position 13 is 1:

42	8	R*4	G	Four pairs of alternating rainfall and runoff values that define the curve for 12 hour duration
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The following position is used if the duration flag in position 13 is 2:

50	8	R*4	G	Four pairs of alternating rainfall and runoff values that define the curve for 24 hour duration
42 or 58	1	A8	I	Rainfall-runoff model type
44 or 60	1	A8	I	Rainfall-runoff model name
46 or 62	1	I*4	G	Number of rainfall-runoff model carryover values
47 or 63	variable	R*4	G	State variables from rainfall-runoff model <u>3/</u>
LS	1	A8	I	Snow model type
LS+2	1	A8	I	Snow model name
LS+4	1	I*4	G	Number of snow model carryover values
LS+5	variable	R*4	G	State variables from snow model <u>4/</u>

Notes:

1/ Must be defined.

2/ Initialized to 0.01.

3/ For SAC-SMA model:

UZTWC upper zone tension water contents; units of MM

UZFWC upper zone free water contents; units of MM
 LZTWC lower zone tension water contents; units of MM
 LZFSC lower zone free water supplementary storage contents;
 units of MM
 LZFPFC lower zone free water primary storage contents; units
 of MM
 ADIMC additional impervious area contents; units of MM
 FI frost index; units of DEGC

For API-CONT model:

API antecedent precipitation index; units of IN
 SMI soil moisture index deficit; units of IN
 BFSC base flow storage contents; units of IN
 BFI base flow index; units of IN
 AEI or first quadrant index, IVOPT = 1; units of IN
 ATI first quadrant index, IVOPT = 2; units of DEGF
 FI frost index; units of DEGF
 FEI frost efficiency index; units of PCT
 IVOPT indicator of first quadrant index; units of INT

For API-CIN model:

API antecedent precipitation index; units of IN
 RANCO storm total rainfall; units of IN
 ROCO storm total runoff; units of IN
 AICO storm antecedent index; units of IN
 AI current antecedent index; units of IN
 NEWSTM storm period counter; units of INT
 AVGT average air temperature; units of DEGF
 TC current corrected synthetic temperature; units of DEGF

For API-HAR model:

API antecedent precipitation index, API; units of IN
 SRAIM storm total rainfall; units of IN
 SRO storm total runoff; units of IN
 SFI storm antecedent index; units of IN
 YFI current antecedent index; units of IN
 SAEI storm antecedent evaporation index, AEI; units of IN
 YAEI current AEI; units of IN
 YAPI current API; units of IN

For API-HFD model:

API antecedent precipitation index, API; units of IN
 SRAIM storm total rainfall; units of IN
 SRO storm total runoff; units of IN
 SFI storm antecedent index; units of IN
 YFI current antecedent index; units of IN
 SAEI storm antecedent evaporation index, AEI; units of IN
 YAEI current AEI; units of IN
 YAPI current API; units of IN

For API-MKC model:

API antecedent precipitation index; units of IN
 RANCO storm total rainfall; units of IN
 ROCO storm total runoff; units of IN
 AICO storm antecedent index; units of IN

AI current antecedent index; units of IN
NEWSTM storm period counter; units of INT
Note: internally state variables are integers:
 - IAPI, IRANCO and IROCO each times 100
 - IAICO and IAI each times 10
 - NEWSTM as is

4/ For SNOW-17 model (common block SNC019 variables):

WE solid portion of water equivalent; units of MM
NEGHS heat deficit; units of MM
LIQW liquid water storage; units of MM
TINDEX temperature index; units of DEGC
ACCMAX maximum water equivalent since snow began to
 accumulate; units of MM
SB areal water equivalent just prior to the new snowfall;
 units of MM
SBAESC areal extent of snow cover just prior to the new
 snowfall; units of PCT
SBWS water equivalent above which 100 percent areal snow
 cover temporarily exists; units of MM
STORGE excess liquid water in storage; units of MM
AEADJ areal extent of snow cover adjustment; units of MM
EXLAG(1) lagged excess liquid water for interval 1 to N; units
to (N) of MM where $N = 2 + (5/\text{time interval of precipitation data})$